

WHAT IS CLAIMED IS:

1) An improved blending tool for rotation upon a blending machine shaft, such tool comprising:

(a) a shank having a long axis, at least one end, and an end region proximate to the end; and

(b) a riser member fixedly mounted during rotation at the end region of the shank, said riser member having an outside surface with a forward region, wherein the forward region is angled outward from the long axis of the shank at an angle between 10 and 16 degrees.

2) The improved tool of **Claim 1**, wherein the angle to the long axis of the shank is between 14 and 15.5 degrees.

3) The improved tool of **Claim 1**, wherein the entire outside surface of the riser member is angled outward from the long axis of the shank at an angle between 10 and 16 degrees.

4) The improved tool of **Claim 1**, wherein the riser member has a generally planar shape.

5) The improved blending tool of **Claim 1**, wherein the shank has a diagonal dimension and the riser member has a height dimension and wherein the ratio of the height dimension to the diagonal dimension is greater than 0.20.

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FOOTNOTES

6) The improved blending tool of **Claim 1**, wherein the shank has a diagonal dimension and the riser member has a height dimension and wherein the ratio of the height dimension to the diagonal dimension is greater than 0.25.

7) The improved blending tool of **Claim 1**, wherein the shank has a diagonal dimension and the riser member has a height dimension and wherein the ratio of the height dimension to the diagonal dimension is greater than 0.27.

8) The improved blending tool of **Claim 1**, wherein:

(a) the blending machine shaft has an axis of rotation and imparts a direction of rotation to the improved blending tool;

(b) a direction exists that is orthogonal to the long axis of the shank and to the rotation axis of the shaft; and

(c) the blending tool further comprises at least one blade extending outward from the shank wherein at least a portion of said blade is swept backward from the orthogonal direction away from the direction of rotation.

9) The improved blending tool of **Claim 8**, wherein the outwardly extending blade is fixedly mounted to the shank such that the shank is the bottom-most tool element mounted on the blending machine shaft.

10) The improved blending tool of **Claim 8**, further comprising a plurality of outwardly extending blades.

11) The improved blending tool of **Claim 1**, wherein each riser member has at least one through hole flow port.

- 12) The improved blending tool of **Claim 11**, wherein:
- (a) each riser member has a leading and a trailing edge; and
 - (b) at least one flow port is located closer to the trailing edge than to the leading edge.

- 13) The improved blending tool of **Claim 1**, wherein:
- (a) the improved blending tool is mounted inside a blending vessel having a wall;
 - (b) the riser member has a leading edge; and
 - (c) the leading edge of the riser member is less than 6 millimeters from the wall of the blending vessel.

- 14) An improved blending tool for rotation upon a blending machine shaft, such tool comprising:

- (a) a shank having a diagonal dimension, at least one end, and an end region proximate to the end; and
- (b) a riser member fixedly mounted during rotation at the end region of the shank, said riser member having a height dimension wherein the ratio of the height dimension to the diagonal dimension of the shank is greater than 0.20.

- 15) The improved blending tool of **Claim 14**, wherein the ratio of the height dimension to the diagonal dimension is greater than 0.25.

- 16) The improved blending tool of **Claim 14**, wherein the ratio of the height dimension to the diagonal dimension is greater than 0.27.

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- 17) The improved blending tool of **Claim 14**, wherein:
- (a) the improved blending tool is mounted inside a blending vessel having a wall;
 - (b) the riser member has a leading edge; and
 - (c) at least a portion of the leading edge is positioned within millimeters from the wall of the blending vessel.

- 18) A blending machine, comprising:
- (a) a vessel for holding a media to be blended;
 - (b) a blending tool mounted inside the vessel, said blending tool comprising both (i) a shank having a long axis, at least one end, and an end region proximate to the end and (ii) a riser member fixedly mounted during rotation at the end region of the shank, said riser member having an outside surface with a forward region, wherein the forward region is angled outward from the long axis at an angle between 10 and 16 degrees; and
 - (c) a rotatable drive shaft, connected to the blending tool inside of the vessel, for transmitting rotational motion to the blending tool.

19) The blending machine of **Claim 18**, wherein the angle to the long axis of the shank is between 14 and 15.5 degrees.

20) The blending machine of **Claim 18**, wherein entire outside surface of the riser member is angled outward from the long axis of the shank at an angle between 10 and 16 degrees.

21) The blending machine of **Claim 18**, wherein the riser member has a generally planar shape.

22) The blending machine of **Claim 18**, wherein the shank of the tool has a diagonal dimension and the riser member of the tool has a height dimension and wherein the ratio of the height dimension to the diagonal dimension is greater than 0.20.

23) The blending machine of **Claim 18**, wherein:

(a) the blending machine shaft has an axis of rotation and imparts a direction of rotation to the improved blending tool;

(b) a direction exists that is orthogonal to the long axis of the shank and to the rotation axis of the shaft; and

(c) the blending tool further comprises at least one blade extending outward from the shank wherein at least a portion of said blade is swept backward from the orthogonal direction away from the direction of rotation.

24) The blending machine of **Claim 23**, further comprising a plurality of outwardly extending blades.

25) The blending machine of **Claim 23**, wherein the outwardly extending blade is fixedly mounted to the shank such that the shank is the bottom-most tool element mounted on the blending machine shaft.

26) The blending machine of **Claim 18**, wherein each riser member has at least one through hole flow port.

27) The blending machine of **Claim 26**, wherein:

(a) each riser member has a leading and a trailing edge; and

(b) at least one flow port is located closer to the trailing edge than to the leading edge.

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28) The blending machine of **Claim 18**, wherein:

- (a) the vessel has a wall;
- (b) the riser member has a leading edge; and
- (c) at least a portion of the leading edge is positioned within 6 millimeters of the wall.

29) A method of blending toners, comprising

- (a) adding toner particles comprising a mixture of toner resin and colorants to a blending machine;
- (b) adding surface additive particles to the mixture of toner particles; and
- (d) blending the toner particles and surface additive particles in the blending machine using a rotating blending tool comprising a center shank having a long axis, at least one end, and an end region proximate to the end plus a riser member fixedly mounted during rotation at the end region of the shank, said riser member having an outside surface with a forward region, wherein the forward region is outwardly angled from the long axis of the shank at an angle between 10 and 16 degrees.

30) The method of **Claim 29**, wherein the step of blending further comprises rotating at least a portion of the riser member at a speed greater than 21 meters/second.

31) The method of **Claim 29**, wherein the step of blending further comprises rotating at least a portion of the riser member at a speed greater than 30 meters/second.

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